Name: Abby Simons Date: 7/12/10

Lesson Title: Algebraic Expressions Unit Title: Week 4

Grade Level: 7th

Objectives:

* Students will be able to translate words into algebraic expressions
* Students will be able to state the Pythagorean Theorem

Set Induction:

* Take attendance
* Hand back any papers
* Students will take out their homework logs and write in the homework for tonight. I will come around and sign it.
* Tell students that this week we will be doing a “mini” research project where they will research a practical application of algebra and present it to the class.
* (5 min)

Content Outline and Learning Activities:

* First, the mathematical topic of the week – the Greek mathematician Pythagoras, and his theorem.
  + Pythagoras
    - Lived from about 570 to 490 BCE
    - Spent many years on island of Samos, off of modern day Turkey
    - Not only a mathematician and scientist, but a great philosopher
    - Had a group of followers who taught others what Pythagoras taught them. Led pure lives, wore simple clothing, no shoes.
    - Most known for proving the Pythagorean theorem. Although, two thousand years before the Sumerians thought the theorem was true but Pythagoras was most likely the first to prove it (unknown for sure whether or not he actually proved it)
  + Handout worksheet – The Pythagorean Theorem. Read through the theorem. Then have the students do a visual proof of the theorem – try to make all the pieces fit into the big square.
  + Clean up materials
  + (12 min)
* move on to algebraic expressions
  + students will take notes
  + remember when we talked about expressions..we defined them as “number expressions” where there are integers (or numbers) and one or more operations. Ask students to give examples of expressions.
    - Expression – made up of integers and operations
    - Operations – multiplication, addition, division, subtraction.
  + What we are going to do is take word statements and then write algebraic expressions from them.
    - First ask the students why we would want to do this? Because in the real world, problems that we will need to solve will be in words, it is our job to translate them into expressions.
    - Developing this skill will help us to write expressions that will help us solve word problems
    - Algebraic expression – when given words, it is our job to translate those words into a numerical expression. Write this statement on the board. Ask the students what this means. Break statement apart into pieces so that the students can explain each piece of the defintion.
      * Words – so a phrase, group of words that we would see from a word problem, etc
      * Translate – given one things, you want to transform it into a new form. Words to numbers and symbols. Same thing but in two forms (can see the same thing in two different ways). Translation examples – in spanish class you have to translate the spainish into english in order to understand what the teacher is saying.
      * Numerical expression – made up of numbers and operations.
    - An algebraic expression is not a sentence, because it does not have a verb which usually is the equal sign. (algebraic statement has an equal sign)
    - Now ask the students what the difference between an expression and an equation is? Expression – no equal sign. Equation – two expressions separated by an equals sign
  + Sometimes these algebraic expressions involve variables.
    - Ask students if they have ever heard the term variable before? What is it? Where have they seen it? In what context?
    - Variable – something that can be anything (write defintion on board)…. To get the students to understand this concept… ask them pick their favorite letter or geometric shape on their paper. … I will say “I know a way that all of these letters and shapes are the same.” Ask the students if they have any idea how that is possible. Because they are all variables! Have the students say what letter or figure they wrote. Point – a variable is ANYTHING!! Any letter, shape, picture, object, etc. stands for something else (usually what you are solving for).
    - Another use of the word in real life… if you are going to dinner at 6 and then to a movie at 8, you are not so sure how long dinner will take. It is a variable, unknown, do not know exactly how long it will take to eat. So in real life must allow more time in order to compensate for this unknown time at dinner.
  + Define constants – the numbers in an expression. (for us it will be integers). So, an algebraic expression is made up of constants, operations, and variables (write on board)
  + (12 min)
* ALGEBRAIC PUZZLES!
  + Students will be given word statements and then will be asked to translate them into algebraic expressions by fitting puzzle pieces together
  + Split the class in half into 2 groups. They will both be given the same puzzle pieces and will have to work together to fit them together in order to write the algebraic expression
  + Word statements (I will write them on the board) –
    - Three times a certain number
    - Six less than a certain number
    - Eight less than twice a certain number
    - One more than three times a certain number
    - Six plus a number
    - A number divisible by eight
  + The students will then put together the puzzle pieces to translate the words into an algebraic expression
  + We will explain each statement as a class before the groups move on to the next word statement
  + (10 min)

Closure:

* Hand out homework – Algebraic Expressions due 7/13/10
* Students will explain the difference between an expression and an equation.
* Then I will ask the students to give their own example of an algebraic expression from a word statement
* (6 min)

Evaluation Procedure:

* Algebraic Expressions homework due 7/13/10

Additional Notes:

* The Pythagorean Theorem
* Scissors
* Tape
* Algebraic Puzzles
  + Word statements (written on board)
  + Puzzle pieces (make out of construction paper)
* Algebraic Expressions homework
* Algebraic Expressions homework answers

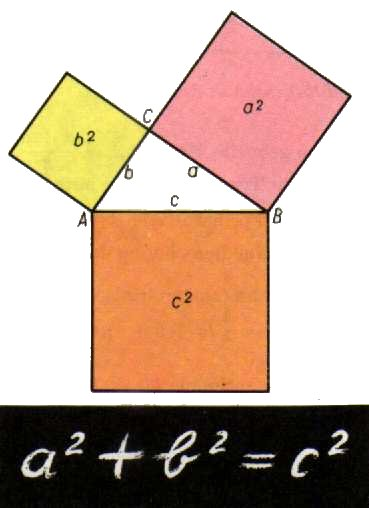
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Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The Pythagorean Theorem

Pythagorean Theorem – “In right-angled triangles the squares on the side subtending the right angle is equal to the squares on the sides containing the right angle.”

In other words, in a right-triangle, the sum of the squares on the two right-angle sides will be equal to the square on the hypotenuse (longer side).



Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Due Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Algebraic Expressions Homework

Directions – write an algebraic expression that represents each verbal expression

* 1. The number T times 3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. 17 less than a number C \_\_\_\_\_\_\_\_\_\_\_\_\_
  3. 15 more than R \_\_\_\_\_\_\_\_\_\_\_\_\_
  4. A number squared \_\_\_\_\_\_\_\_\_\_\_\_\_
  5. Fifteen more than three times a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  6. A number added to itself three times \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  7. Seven decreased by E \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  8. Five more than R squared \_\_\_\_\_\_\_\_\_\_\_\_\_\_
  9. Fourteen fewer than nine times a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  10. Jamie buys a carton of eggs every month and gives two eggs to her roommate. Let e be the number of eggs in a carton. Represent the total number of eggs that Jamie has for herself for a 6-month period.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: Answer Key

Due Date: 7/13/10

Algebraic Expressions Homework

Directions – write an algebraic expression that represents each verbal expression

1. The number T times 3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3T
2. 17 less than a number C \_\_\_\_\_\_\_\_\_\_\_\_\_ C – 17
3. 15 more than R \_\_\_\_\_\_\_\_\_\_\_\_\_ R + 15
4. A number squared \_\_\_\_\_\_\_\_\_\_\_\_\_ X2
5. Fifteen added to three times a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3X + 15
6. A number added to itself three times \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ X + X + X or 3X
7. Seven decreased by E \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 7 – E
8. Five more than R squared \_\_\_\_\_\_\_\_\_\_\_\_\_\_ R2 + 5
9. Fourteen fewer than nine times a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 9X – 14
10. Jamie buys a carton of eggs every month and gives two eggs to her roommate. Let e be the number of eggs in a carton. Represent the total number of eggs that Jamie has for herself for a 6-month period.

\_\_\_\_\_\_\_\_\_\_\_\_ 6(e – 2) = 6e – 12

Name: Abby Simons Date: 7/13/10

Lesson Title: Algebraic expressions Unit Title: Week 4

Grade Level: 7th

Objectives:

* Students will be able to translate words into algebraic expressions
* Students will be able to evaluate expressions
* Students will be able to describe the purpose of algebra and its applications

Set Induction:

* Take attendance
* Hand back any papers
* Students will write in homework for tonight in their homework logs. I will come around and sign it.
* ask students for definitions of variable, equation, and expressions
* (3 min)

Content Outline and Learning Activities:

* We will review the homework from last night – Algebraic Expressions. When finished, students will hand it in to me. (5 min)
* Tell students they will use what we talked about yesterday to help with when we make algebraic statements from word problems next week. Keeps building off of each other. We will take the pieces of expressions and put them together into equations in order to solve problems. (2 min)
* We will move on to evaluating algebraic expressions
  + First ask the students what I mean by evaluating expressions? (replace each letter with its value and then do the order of the operations)
    - Value = the number that you replace the letter with (and then do the order of operations)
  + Hand out worksheet on evaluating algebraic expressions
  + Do practice examples and then students will fill out rest of sheet
  + (15 min)
* Start rest of week discussion on the purpose of algebra.
  + We will discuss the implications of algebra. Why is it so important for us to study this subject? – class discussion
    - First, ask the students why they think algebra is important? (we will record everything on a big piece of paper the students ideas and then discuss some of the reasons I came up with why algebra is so important)
    - Importance –
      * To develop higher reasoning skills
      * How to solve problems
      * Used every day at the grocery store when we compare prices and buy items
      * Used in chemistry to find out how much substance they may need for an experiment or how much they made from an experiment
      * Used by banks, loans, taxes, (money uses), etc
      * Used in astronomy to find distances between planets and stars
      * Also used for building structures
      * These are just a few of the scenarios where algebra is used
    - (7 min)
* Now we will do a little warm up activity that will lead into the project the students will be doing the next two days to show students the importance of learning algebra
  + Activity – the students will be given a piece of 8 ½ by 11 paper and one arm’s length of tape. Their goal is to construct a carrier to support a bag of M & M’s that I bring in. the container must hold its shape when we test it to hold the bag of candy. When the students think they made a carrier, they will raise their hand and I will bring the candy to test their design. Pair up students (me give out partners to complete the activity)
  + At the end we will discuss the best designs and why the students thought that some holders worked better or worse than others.
  + Clean up materials
  + (8 min)

Closure:

* Hand out homework – Evaluating Algebraic Expressions due 7/14/10
* Discuss implications of algebra and how it was related to the container activity they did today
  + Problem solving, constraints, how to do something, design.
* (5 min)

Evaluation Procedure:

* Evaluating Algebraic Expressions homework due 7/14/10

Additional Notes:

* Algebraic Expressions answer key – homework from 7/12/10
* Evaluating algebraic expressions worksheet
* Evaluating algebraic expressions answer sheet
* Big piece of paper for algebra importance discussion
* Pieces of 8 ½ by 11 paper
* Tape
* Bad of M & M’s
* Markers
* Evaluating Algebraic expressions homework
* Evaluating algebraic expressions homework answer key

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Evaluating Algebraic Expressions

What does it mean to evaluate an expression?

You must replace each letter with its value and then follow the order of operations.

Note: the value of a letter is the number that you replace the letter with

2 Steps to evaluating algebraic expressions:

1. Replace each letter with its value
2. Follow the order of operations

PRACTICE!!

Directions – evaluate the following expressions where a = 3, b = 6, and c = 5

1. b – a + c
2. a + b – c
3. ab + ac
4. (b/a) + ac
5. a2 + c2
6. b2 – a2
7. (a + b) ÷ c
8. a + b2 – c

Name: Answers

Date: 7/13/10

Evaluating Algebraic Expressions

What does it mean to evaluate an expression?

You must replace each letter with its value and then follow the order of operations.

Note: the value of a letter is the number that you replace the letter with

2 Steps to evaluating algebraic expressions:

1. Replace each letter with its value
2. Follow the order of operations

PRACTICE!!

Directions – evaluate the following expressions where a = 3, b = 6, and c = 5

1. b – a + c

6 – 3 + 5 = 3 + 5 = 8

1. a + b – c

3 + 6 – 5 = 9 – 5 = 4

1. ab + ac

3\*6 + 3\*5 = 18 + 15 = 33

1. (b/a) + ac

(6/3) + 3\*5 = 3 + 15 = 18

1. a2 + c2

32 + 52 = 9 + 25 = 34

1. b2 – a2

62 – 32 = 36 – 9 = 27

1. (a + b) ÷ c

(3 + 6) ÷ 5 = 9/5

1. a + b2 – c

3 + 62 – 5 = 3 + 36 – 5 = 39 – 5 = 34

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Due Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Evaluating Algebraic Expressions Homework

Directions: Evaluating the following algebraic expressions. SHOW ALL STEPS!!!

Note: substitute 4 for x, -4 for y, and -12 for z

1. z – y
2. x + z
3. x + y – z
4. (x – y) + z
5. y + z
6. (y + z) – x
7. y – z
8. x + yz
9. xz + yz
10. z – z – x

Name: Answer Key

Due Date: 7/14/10

Evaluating Algebraic Expressions Homework

Directions: Evaluating the following algebraic expressions. SHOW ALL STEPS!!!

Note: substitute 4 for x, -4 for y, and -12 for z

1. z – y

-12 – (-4) = -12 + 4 = -8

1. x + z

4 + (-12) = -8

1. x + y – z

4 + (-4) – (-12) = 0 + 12 = 12

1. (x – y) + z

(4 - -4) + (-12) = 8 + (-12) = -4

1. y + z

-4 + (-12) = -16

1. (y + z) – x

(-4 + -12) – 4 = (-16) -4 = -20

1. y – z

-4 - -12 = -4 + 12 = 8

1. x + yz

4 + -4\*(-12) = 4 + 48 = 52

1. xz + yz

4\*(-12) + (-4)(-12) = -48 + 48 = 0

1. z – z – x

-12 –(-12) – 4 = -12 + 12 – 4 = -4

Name: Abby Simons Date: 7/14/10

Lesson Title: Algebraic Applications Unit Title: Week 4

Grade Level: 7th

Objectives:

* Students will be able to explain the purpose of algebra through real-world examples

Set Induction:

* Take attendance
* Hand back any papers
* Students will write in homework for tonight in their homework logs. I will come around and sign it.
* Explanation of today – toothpick bridges!
* (3 min)

Content Outline and Learning Activities:

* Review homework from last night – evaluating algebraic expressions. I will collect when finished reviewing. (10 min)
* Toothpick application of algebra
  + Students will create their own bridge out of toothpicks that must hold 40 grams between two desks that are 6 inches apart. Students can only use toothpicks and tape. Must hold 40 grams and stand between two desks that are 6 inches apart.
  + First explain project to the students and hand out toothpick guidelines sheet. Build a toothpick bridge that can hold 40 grams and lies between two desks that are 6 inches apart. Read over the guidelines sheet with the students. **Show students what 40 grams looks like** (5 min)
  + I will separate the class into partners to work on for this project
  + Students will be given the next 15 min to create a design and plan for their bridge. They must submit to me a drawing with a model they will use when building the bridge and must give a written paragraph (5 sentences) explanation on why they think their design is going to work, also how they think the structure of their bridge will be able to hold the 40 grams. (15 min) STUDENTS MUST SUMBIT A PLAN BY THE END OF TODAY’S CLASS! And both partners must have a copy, can use for final reflection for homework tm night.
  + Once I check the students’ plans and models, they will be given the remaining time to start the building of their bridge. (7 min)

Closure:

* Clean up materials
* Hand out homework – Algebra Application Problems due 7/15/10
* (5 min)

Evaluation Procedure:

* Algebra Application Problems due 7/15/10

Additional Notes:

* Evaluating algebraic expressions answer key from 7/13/10
* Toothpick guidelines sheet
* ruler
* toothpicks
* tape
* string and M & M’s 40 gram weight
* Algebra Application Problems
* Algebra Application Problems Answer Key

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Toothpick Bridge Guidelines

Objective: To build a bridge out of toothpicks and tape that is able to hold 40 grams and lies between two desks that are spaced 6 inches apart.

Checklist:

1. You will be given 15 minute to design your plan. You must submit a drawing of your bridge that you intend to build. Also, you must write a paragraph explanation (at least 5 sentences) on how your design works and why you think it will be able to hold 40 grams. Submit your work on a separate piece of paper. Both partners must have a copy of the plan because you will need it for your final reflection.
2. Hand in your plan to the teacher.
3. Once your plan is approved by the teacher and no more changes need to be made, you will be allowed to build your design. You are encouraged to test your bridge along the way.
4. When your bridge is complete, we will test the bridges and see whose can withstand the 40 gram bag of M & M’s.

Keep in mind…

1. The distance the bridge needs to span is crucial in the construction of the bridge.
2. Do not use broken toothpicks
3. Test the toothpicks you are going to use to build the bridge by rolling the toothpicks between your thumb and forefingers. Apply pressure. If the toothpick bends or breaks easily, do not use the toothpick.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Due Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Algebra Application Problems

Directions: Solve the following problems. SHOW WORK!

1. While playing soccer, you broke two windows in the neighbor's house. The court assessed the following damages: $50 for each window, plus $100 for the materials to install the new windows, plus late fees of $3 for each day that the windows remain broken. The windows remained broken for 11 days. How much your parents will have to pay?
2. Sir Godfrey has been collecting gemstones for 3 years. His favorite gems are rubies. Out of his 233 gems, 75 are rubies. How many gems does he have that are not rubies, if there are 3 other types of gemstones?
3. Matt makes $500 every two weeks. He needs $1750 to pay for his vacation at the end of the summer. How many weeks will Matt need to work to pay for his vacation?

Directions: Translate the following expressions

1. Three less than nine times a number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Thirty five added to six \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. The length of a football field is 30 yards more than its width. Express the length of the field in terms of its width *w*.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name: Answer key

Due Date: 7/15/10

Algebra Application Problems

Directions: Solve the following problems. SHOW WORK!

1. While playing soccer, you broke two windows in the neighbor's house. The court assessed the following damages: $50 for each window, plus $100 for the materials to install the new windows, plus late fees of $3 for each day that the windows remain broken. The windows remained broken for 11 days. How much your parents will have to pay?

2 \* 50 + 100 + 3 \* 11 = $233

1. Sir Godfrey has been collecting gemstones for 3 years. His favorite gems are rubies. Out of his 233 gems, 75 are rubies. How many gems does he have that are not rubies, if there are 3 other types of gemstones?

233 – 75 = 158

1. Matt makes $500 every two weeks. He needs $1750 to pay for his vacation at the end of the summer. How many weeks will Matt need to work to pay for his vacation?

500 + 500 + 500 + 250 = 1750

2 + 2 + 2 + 1 = 7 weeks

Directions: Translate the following expressions

1. Three less than nine times a number \_\_\_\_\_\_\_\_\_\_\_\_ 9t – 3
2. Thirty five added to six \_\_\_\_\_\_\_\_\_\_\_\_ 6 + 35
3. The length of a football field is 30 yards more than its width. Express the length of the field in terms of its width *w*.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ w + 30

Name: Abby Simons Date: 7/15/10

Lesson Title: Algebraic Applications Unit Title: Week 4

Grade Level: 7th

Objectives:

* Students will be able to explain the purpose of algebra through real-world examples

Set Induction:

* Take attendance
* Hand back any papers
* Students will write the homework for tonight in their homework logs. I will come around and sign them.
* (2 min)

Content Outline and Learning Activities:

* We will review homework from last night – Algebra Application Problems from 7/14/10. I will collect homework when finished reviewing. (5 min)
* Students will be given 30 min to build their bridges. They can test while they are building. But they must be finished their bridge in 30 min. (30 min)
* We will go around the classroom and test each bridge with the M & M weight. TELL STUDENTS THAT THEY MUST BE PAYING ATTENTION TO EVERYONE’S BRIDGES WHEN WE ARE TESTING THEM BECAUSE PART OF THEIR REFLECTION TONIGHT WILL BE ABOUT THE STRONGEST BRIDGE FROM CLASS (5 min)

Closure:

* Clean up materials
* Explanation of homework – must write two paragraphs (each paragraph with 5 sentences) for homework. Reflection on the toothpick bridge activity. Explanation of design and procedure, what happened when they tested the bridge, what went wrong, what went right, how they can improve it/what changes they should have made, and what design do they think created the strongest bridge. Hand out Toothpick Bridge Reflection. Due tm 7/16/10
* (3 min)

Evaluation Procedure:

* Toothpick Bridge Reflection due tm 7/16/10

Additional Notes:

* Algebra Application Problems answer key from 7/14/10
* Toothpicks
* Tape
* M & M 40 gram weight and string to hold it
* Ruler
* Toothpick Bridge Reflection sheet

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Due Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Toothpick Bridge Reflection

Directions: Write up a two paragraph reflection on our toothpick bridge project. Your write up should be at least ten sentences (5 sentences per paragraph). Include the following topics in your response:

* Explanation of your design (may use plan submitted to teacher yesterday)
* The plan used to build your bridge (may use plan submitted to teacher yesterday)
* What happened when you tested your bridge with the weight
  + Did it hold the weight or not? What went wrong, what went right?
* How could you improve your design/ what changes should have been made? (and you may not write that no changes should have been made)
* Looking at all of the designs from class today, which design was the strongest and why?

Name: Abby Simons Date: 7/15/10

Lesson Title: Algebra Project Reflection Unit Title: Week 4

and Intro to Coordinate Plane Grade Level: 7th

Objectives:

* Students will be able to explain the purpose of algebra through real-world applications
* Students will be able to reproduce the Coordinate plane
* Students will be able to identify the pieces of the Coordinate plane

Set Induction:

* Take attendance
* Hand back any papers
* Re-stress the importance of algebra to the students. We shouldn’t be just going through the motions, we should be analyzing and assessing the situations we are given and trying to find a solution to these problems.
* (3 min)

Content Outline and Learning Procedures:

* Check that all students have their toothpick bridge reflections (at least ten sentences, 2 paragraphs) (2 min)
* Toothpick Bridge project reflection.
  + Students will sit with their partners. Each group will present their findings (from their reflection homework last night) but each student must respond.
  + Then class will discuss the implications of this project. Ask the students why they think I had them construct a toothpick bridge and how it is related to algebra?
    - Problem solving. Given constraints and certain materials have them solve something. Even though they didn’t solve a mathematical problem with numbers and equations, they still solved a problem from a given situation. Wanted them to think about how they need to respond to problems.
  + **Collect students’ reflections when done discussion**.
  + (15 min)
* Introduction to the coordinate plane…
  + Rene Descartes
    - French philosopher, mathematician, and scientist
    - Lived 1596 – 1650
    - One of the most influential and important thinkers in history
    - The Cartesian coordinate system was named after him – allowed geometric shapes to be expressed in algebraic expressions
    - The Cartesian plane is also known as the coordinate plane
  + What is the coordinate/Cartesian plane?
    - First ask the students if they know what it is? Seen it before? – grid used for graphing shapes (that come from equations)
    - Composed of four quadrants and 2 axes.
  + On the board, draw an example Cartesian plane. Hand out Cartesian/Coordinate Plane Worksheet … Students will copy on notes sheet and they will label all the pieces of the coordinate plane
    - The 2 axes are horizontal and vertical number lines that intersect at the origin.
      * Can locate shapes or points in these regions (based on their coordinates or ordered pair)
      * Make sure they label +x, -x, +y, and -y
    - The four quadrants appear when you draw the number lines on the plane. They are labeled counter-clockwise with Roman Numerals…I, II, III, IV. (STRESS – they must be labeled with Roman numerals, not regular numbers)
    - The horizontal and vertical lines intersect at the origin (0, 0).
  + If time, introduce the concept of the ordered pair.
    - For example the origin is labeled (0,0) – this is an ordered pair. It has two numbers to create on point on the Cartesian plane.
  + (20 min)

Closure:

* No homework, its Friday!
* Draw a Cartesian plane on the board. Students will identify the origin, x-axis, y-axis, and the four quadrants (5 min)

Evaluation Procedure:

* No homework, it’s Friday!

Additional Notes:

* The Cartesian/Coordinate Plane notes sheet
* The Cartesian/Coordinate Plane notes sheet answers

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The Cartesian/Coordinate Plane

What is the Coordinate Plane (also known as the Cartesian plane)?

Draw your own Coordinate Plane and label all the pieces.

Now describe and define the pieces of the Coordinate Plane.

1. Four Quadrants:
2. 2 axes:
   1. One horizontal –
   2. One vertical –
3. Intersection of the 2 axes is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Name: Answers

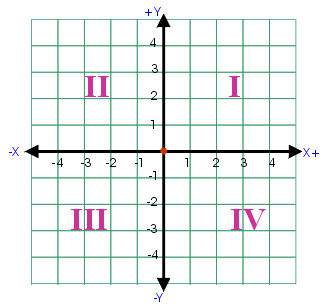
Date: 7/16/10

The Cartesian/Coordinate Plane

What is the Coordinate Plane (also known as the Cartesian plane)?

The Cartesian plane is a grid that is used for graphing shapes (which comes from equations).

Draw your own Coordinate Plane and label all the pieces.



Now describe and define the pieces of the Coordinate Plane.

1. Four Quadrants: appear when draw in the 2 axes. Can locate shapes in these regions
2. 2 axes:
   1. One horizontal – x axis. Both positive and negative pieces – number line
   2. One vertical – y axis. Both positive and negative pieces – number line
3. Intersection of the 2 axes is called the \_origin\_.